What is ERCOT?

The Texas Legislature restructured the Texas electric market in 1999 and assigned ERCOT four primary responsibilities:

- System reliability
- Competitive wholesale market
- Open access to transmission
- Competitive retail market

ERCOT is a nonprofit organization that is regulated by the Public Utility Commission of Texas, with oversight by the Texas Legislature.

ERCOT is not a market participant and does not own generation or transmission/distribution wires.
The fundamental concept behind ERCOT operations is that generation has to match load at all times.

In other words, a 1 MW reduction in load has the same effect on the grid as a 1 MW increase in generation.
Daily Peak Hour Demands: June 1 – August 19, 2019

June was cool and wet

July was warm and dry

Higher Demands in August
Peak & EEA Days

Will focus on this week for subsequent slides.
Difference of Load and Net Load Peak Times

- Net Load
- Load
- MaxNet
- MaxLd

MW

- 8/12/2019
- 8/13/2019
- 8/14/2019
- 8/15/2019
- 8/16/2019

- 16:40
- 15:20
- 16:50
- 16:25
- 16:25

- 14:50
- 15:15
- 17:40
- 15:25
- 15:15

- 10,000
- 20,000
- 30,000
- 40,000
- 50,000
- 60,000
- 70,000
- 80,000
Load, Wind, and Outage Differences – 8/12-8/13

At time of lowest reserves

Outages Shown are non-IRR Outages
Load, Wind, and Outage Differences – 8/12-8/15

At time of lowest reserves

- Load (MW)
- Wind (MW)
- Outages (MW)

Outages Shown are non-IRR Outages

8/12/2019 14:51
8/13/2019 15:14
8/14/2019 15:18
8/15/2019 15:20
8/16/2019 15:20

-2968
-3769
+1087
Load, Wind, and Outages for 74GW and EEA Days

At time of instantaneous peak demand
System Prices and Load (2 to 6 p.m.)

Wholesale Market Price

Load

EEA Level 1
August Conditions Continued into early September

- On Wednesday, Sept. 4, ERCOT issued a conservation appeal for Thursday, Sept. 5 and Friday, Sept. 6, from 2 to 7 p.m. each day.

- Appeal was due to anticipated tight conditions resulting from high temperatures and low wind output.

- ERCOT was able to maintain grid reliability and did not declare emergency conditions on either day.

- New September peak set on Friday, Sept. 6 when demand reached 68,817 MW between 4 and 5 p.m. This beats the previous record set Sept. 3 by 271 MW.
Annual Energy and Peak Demand (2008-2018)
Current Demand Records

Peak Demand Record: 74,531 megawatts (MW)*
• Monday, August 12, 2019, 4-5 p.m.

Weekend Peak Demand Record: 71,864 MW*
• Sunday, August 11, 2019, 5-6 p.m.

Winter Peak Demand Record: 65,915 MW
• Wednesday, Jan. 17, 2018, 7-8 a.m.

Monthly Peak Demand Records

February: 57,265 MW (Feb. 10, 2011)
March: 60,756 MW (March 5, 2019)
April: 53,486 MW (April 28, 2017)
May: 67,265 MW (May 29, 2018)
June: 69,123 MW (June 27, 2018)
July: 73,473 MW (July 19, 2018)
August: 74,531 MW (Aug. 12, 2019)*
September: 68,817 MW (Sept. 6, 2019)*
October: 62,333 MW (Oct. 9, 2017)
November: 56,317 MW (Nov. 14, 2018)
December: 57,932 MW (Dec. 19, 2016)

*New records are preliminary, subject to change in final settlement
Installed Generating Capacity in ERCOT

**2017 Generating Capacity**
- Capacity available: 93,546 MW
- Natural Gas: 53%
- Coal: 21%
- Nuclear: 5%
- Wind: 19%
- Other: 3%

**2018 Generating Capacity**
- Capacity available: 94,626 MW
- Natural Gas: 54%
- Coal: 16%
- Nuclear: 5%
- Wind: 21%
- Other: 3%

**2019 Generating Capacity**
- Capacity available: 96,405 MW
- Natural Gas: 54%
- Coal: 15%
- Nuclear: 5%
- Wind: 22%
- Other: 4%

- Summer generation capacity information provided by December CDR Reports for 2016, 2017 and 2018.
- Reflects operational installed capacity — excludes units designated as indefinitely mothballed or under extended outage, and accounts for rating changes reported by resource owners.
- Other category includes hydro, biomass-fired units and DC ties.
Looking Ahead: ERCOT Resource Mix Trends

Existing resources:
- Gas: 52.5 GW
- Wind: 22.0 GW
- Solar: 1.9 GW
- Nuclear: 5.0 GW
- Coal: 14.2 GW
- Other: 2.0 GW
- Storage: 0.1 GW

Total: 97.6 GW

Data as of June 2019

CDR-eligible planned resources:
- Gas: 2.0 GW
- Solar: 7.1 GW
- Nuclear: 5.0 GW
- Wind: 13.8 GW

Total: 22.9 GW

Other planned resources:
- Wind: 22.0 GW
- Solar: 52.0 GW
- Storage: 3.9 GW

Total: 86.0 GW
May 2019 Capacity, Demand and Reserves (CDR) Report

- System-wide growth rate expected to be 2.5% to 3% through 2022

- CDR calculates higher planning reserve margins between 2020 and 2023
  - Primarily due to an increased number of potential wind and solar projects currently in the interconnection queue and eligible for inclusion in the CDR

- Planned resources that became eligible for inclusion in this CDR total 5,643 MW of installed capacity by 2023, including 517 MW of battery storage

- Record number of interconnection requests in 2018; 30% increase compared to 2017

*ERCOT does not anticipate all of these projects will get built, and some may be delayed for various reasons.
Transmission Planning Summary

- Projects in engineering, routing, licensing and construction total about $3.86 billion.

- Projects energized in 2019 total about $1.01 billion.

- Endorsed transmission projects totaling $295.6 million in 2019 ($612 million in 2018).

- As of August 31, 2019, tracking 583 active generation interconnection requests totaling 112,615 MW (includes 35,276 MW of wind, 64,579 MW solar and 4,200 MW of battery storage)
ERCOT Communication Channels

ERCOT website – www.ercot.com
- Today’s Outlook and grid conditions
- Daily and seasonal weather
- Market information, prices and more

Social media – join us!
- Twitter: @ERCOT_ISO
- Facebook: Electric Reliability Council of Texas
- LinkedIn: ERCOT

ERCOT mobile app
- Real-time updates
- Wholesale pricing
- Information sharing